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News & Views

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Your PC May Not Make it into the Next Century

In 1984, a serious problem was inadvertently designed into the PC and remains a problem today. The system date will probably be incorrect on 01-01-2000 or later because of a hardware flaw. Similarly, many software application problems will emerge as the year 2000 approaches and passes even if the system date is correct.

Today, a few machines are being produced that cure the hardware (CMOS Real Time Clock (RTC)) century problem; it's safe to expect that this will eventually become the norm. At the moment, virtually 100% of the PCs in use will fail to advance the date to the year 2000.

The Hardware Problem

The standard PC computer system maintains two system dates: one is in the CMOS Real Time Clock chip - a hardware component normally on the machine's motherboard. The other is in the DOS and Windows operating system software.

The two dates are represented differently. The CMOS RTC date is kept as *century/two digit year/month/day* and the DOS date is kept as *days since 1980/01/01* which is converted to *four digit year/month/day* when any program asks for it. When DOS boots, it normally initializes its current date by reading the date in the CMOS RTC and converting it to *days since 1980/01/01*. DOS maintains its date as long as the system is running; the CMOS RTC hardware maintains its date whether the system is running or not, but it does not maintain the century. In the CMOS RTC, year 99 overflows to 00 and the century remains unchanged so the effective year becomes 1900; in DOS, year 1999 overflows to 2000. So until the system is rebooted, there will appear to be no problem with the transition from year 1999 to 2000; but trouble lurks in the CMOS RTC date, which has now become year 1900.

If, when DOS boots, it reads an out-of-range date from the CMOS RTC, as 1900 is, the date conversion

INSIDE

algorithm (*todays since 1980/01/01*) calculates an erroneous *1980-01-04*. This is what the DOS date will become after rebooting the system after the year 2000 transition if the CMOS RTC exhibits the standard flaw.

A few specific BIOSs cause behavior other than the standard flaw. Importantly, the Award v4.50 series BIOS (dated prior to November 1995) - currently common among Pentium- and 486-based machines - might not allow any date after 1999 and, if so, it can not be corrected by software.

A Solution

Assuming the user remembers to do so, this erroneous DOS date can be corrected by simply setting the date to what it should be; DOS will (via the BIOS) set the CMOS RTC century correctly so subsequent boots will yield the correct date. The date will be incorrect, though, until the correct date is set (a network login will usually set the date). Or, if YEAR2000.EXE, a freeware program, is installed, the century correction will happen automatically.

YEAR2000.EXE applies a simple rule: if the CMOS RTC two-digit year (in CMOS address 9) is less than 50 the century (in CMOS address 50d, or 55d for PS/2 machines) is assumed to be 20, otherwise the century is assumed to be 19. This makes the resulting year range 1950 through 2049 rather than 1980 through 2099, the usually expressed limits, but in 2049 these machines will be relics at best, so its doubtful that this will be a practical detriment.

Calendar of Events

November 6
ITMG, 8:30 am, Rm 111, Metcalf
November 7
PSCTF, 1:00 pm, DOT Auditorium
November 12
ITAC, 8:30 am, Rm 111, Metcalf
November 19
SEC, 2:00 pm, DPHHS Auditorium
November 22
Governor's Blue Ribbon Task Force, 10:00 am, DPHHS Auditorium
December 4
ITMG, 8:30 am, Rm 111, Metcalf
December 5
PSCTF, 1:00 pm, Rm C209, Cogswell
December 17
SEC, 2:00 pm, DPHHS Auditorium

The century change rule must be applied at two times: at boot, to cover the likelihood that the year change has occurred while powered off, and, when powered on, at each time the CMOS RTC two-digit year changes (which only occurs once each year at New Year's Eve midnight). YEAR2000.EXE uses standard periodic interrupts to test for this occasion. If, when YEAR2000.EXE loads, the year is already 2000 or greater, it will not remain resident since the program then serves no purpose. When it is resident, though, it occupies less than 500 bytes, uses insignificant processor time, and should exhibit no compatibility problems.

Most of the content of this article comes from the readme text file included with the YEAR2000.EXE program. You can access this file though the Value Added Server: doa_vas_001\sys:guest\year2000.

For more information contact Kathleen Androlewicz of the Telecommuications Operations Bureau at 444-9645, ZIP! or E-Mail at kandrolewicz@mt.gov.

How can I find out if my computer supports the year 2000 date change?

Take these steps:

1. Set the time on your computer to 11:55 pm, and the date to December 31, 1999.
2. Turn off your computer and wait for five minutes.
3. Turn on your computer, booting from a "system only" floppy disk. This disk contains DOS without config.sys or autoexec.bat. You can use your virus protection boot disk. Making this disk is explained in "How to Make a Clean Start-up Diskette for DOS and Windows Virus Scanning" in this issue of *News & Views.*

If the date prompt displays "2000" as the year, you have nothing to worry about. If it displays any other year, upgrade your BIOS by contacting the system's manufacturer.

NOTE: Each BIOS is specifically written for each system. The original manufacturer is the best source of BIOS upgrades. There is a second source, Micro Firmware, that sells BIOS upgrades for many systems.

Blue Ribbon Telecommunications Task Force

The Governor's Blue Ribbon Telecommunications Task Force (BRTF) was authorized by the 1995 legislature to examine Montana's telecommunications infrastructure. The provisions of House Bill 460 (HB 460) required the BRTF to report its findings and recommendations to the Governor and the legislature on or before September 1, 1996.

The legislative charge to the BRTF was to examine Montana's telecommunication infrastructure and determine recommendations to ensure the implementation of policies, practices and statutes regarding access to advanced telecommunications services.

At its organizational meeting on September 22, 1995 the Governor's Task Force elected Senator Tom Beck as Chairman and Representative Joe Quilici as Vice Chairman. At this time it was decided that the development of a subcommittee structure would be the most effective means of adequately addressing the broad range of issues assigned to the BRTF in HB 460.

Early this year the United States Congress enacted the *Telecommunications Act of 1996* (Federal Act), which was signed by President Clinton on February 8, 1996. To accommodate the sweeping impact of the passage of the Federal Act, the BRTF reorganized its original subcommittee structure. Each BRTF member was given the opportunity to serve on one or more of the following final subcommittees: *Universal Access/Service, Federal Legislation/Policy & Regulation of State Government, and Legislation*.

The implementation of the Federal Act is just beginning to emerge through the rule making processes undertaken by the Federal Communications Commission. It is clear that the states will have specific responsibilities to be administered by organizations such as the Public Service Commission in each state. However, these responsibilities may not take the form of traditional regulation and may not be currently authorized in Montana statute.

To encourage the transition to a robust competitive telecommunications marketplace, and to remove barriers to competition and disincentives to investment in telecommunications deployment and use, the BRTF developed recommendations regarding *Number Portability, Dispute Resolution, Interconnection, Dialing Parity, Regulation, Competitive parity in Taxation, Cost/Price Relationships, Unbundling, Capital Recovery, Resale, and Competitive Rates.*

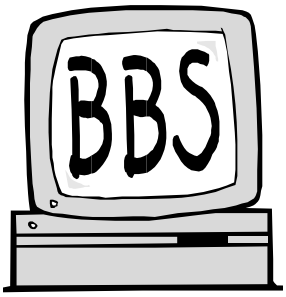
HB 460 recognized that "access to advanced telecommunication services is essential to ensure continued economic growth, Montana's competitive position in the global market, and a superior quality of life for Montanans". Nowhere is there a more crucial issue than in the state's vast rural areas because advanced telecommunications technologies can overcome the obstacle of geographic distance to deliver educational options, health care, economic opportunities, and more, unleashing the productive capacity of Montanans living in these areas. To encourage widespread access to advanced telecommunications technologies in Montana's communities, the BRTF recommends the creation of a *Montana Universal Access Program*.

After a year of meetings involving numerous committees, subcommittees and working groups, the Governor's Blue Ribbon Telecommunications Task Force presented a preliminary report to the Governor in September. A series of public awareness functions are planned to inform the public of the Task Force's work in advance of the 1997 legislative session. A final report will be submitted mid-November.

Questions about the Governor's Blue Ribbon Telecommunications Task Force may be directed to Tony Herbert of Information Services Division at 444-2700, ZIP! or E-Mail at therbert@mt.gov. Tony is the *ex-officio* member of the Task Force.

Bulletin Board System Conversion

The Department of Administration, Information Services Division (ISD) is contracting with the Office of Public Instruction (OPI) to perform system administration and support functions for the State Electronic Bulletin Board System (BBS). However, ISD will remain responsible for the overall operation of the BBS. Consolidation of the State BBS into the Educational MetNet environment will provide efficiencies in managing the two largest state operated bulletin board systems. Furthermore, the new system will provide an improved user interface and enhanced features and capabilities that the current system does not provide.



Timeline

The system change will occur Monday, November 18, 1996. The data from the current BBS will be available in its entirety on the new system at that time.

SYSOP Training Dates

Training is available to all agency BBS SYSOPs on November 6-8, 13 and 14. This 2-hour "hands on" training will cover typical SYSOP functions including: uploading and downloading files, responding to agency E-Mail as well as navigation of the new system. The training will be held in the OPI training room located in the OPI Executive Management Building 1228 11th Ave. For more information on training, or to sign up for a SYSOP class please contact Steve Meredith at 444-3563

BBS Access Options

The current BBS access modes include dial up access using any communications software and a modem, and Novell NetWare IPX access. The new BBS will also provide TCP/IP access. The IPX and TCP/IP access options are available to Windows users only. The BBS phone numbers will remain the same: 406-444-5648 for local and out of state calls and 800-962-1729 for toll free calls in Montana.

New Software Including a New Graphical Interface

Along with the change of system administration the BBS will have a new look. The current BBS uses Clark Development Corporation's *PCBoard* software whereas the new system will use *FirstClass* from SoftArc Inc. Windows users will be pleased to find the common Graphical User Interface (GUI) along with point and click command action available in a FirstClass Windows client (software that runs on your PC and provides access to the system). Although DOS users cannot connect to the new system with IPX or TCP/IP they will still be able to dial into the system with any communications software and a modem for a text interface rather than a GUI presentation. A DOS client that provides IPX and TCP/IP access is currently undergoing beta testing and should be available prior to the 1997 Legislative session.

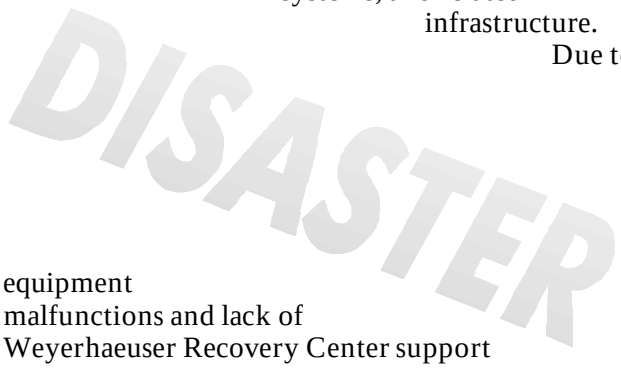
If you are running Windows on your desktop we would recommend obtaining a copy of the FirstClass Windows client prior to the November 18th conversion to ensure that the client is installed correctly and operational. The Windows client utilizes approximately 1.52 MB of disk space. The Windows client software, SBBS.EXE is available for downloading from the current BBS or from the ISD Value Added Server (VAS) in the \GUEST\BBSDISK subdirectory. To download the Windows client software, from the BBS Main Menu select F(iles) then 3 (Download Files not belonging to a specific agency). Flag the file SBBS.EXE and download it to your PC. SBBS.EXE is a self-extracting executable file. When run from Windows, SBBS.EXE invokes an install process that allows you to install the client on your PC or a network allowing several PCs to access the software. Before you install the software please contact your network administrator.

For more information regarding the BBS changes please contact Candace Hastings of End User Systems Support at 444-2858, ZIP! or E-Mail at chastings@mt.gov or Kyle Wynn of End User Systems Support at 444-2859, ZIP! or E-Mail at kwynn@mt.gov.

Another Disaster is about to Strike!

Well, a planned one anyway...

As you are aware, ISD is required to perform semi-annual disaster recovery drills to test the State of Montana's ability to recover critical information processing systems. Four previous drills have been conducted with the latest being completed May 3-5, 1996. These disaster recovery tests have successfully recovered the Department of Administration's data center, portions of the statewide telecommunications network, numerous agency application systems, and related infrastructure. Due to equipment malfunctions and lack of Weyerhaeuser Recovery Center support functions in the May drill, AS/400 testing was limited. A November drill has been scheduled to confirm abilities for the AS/400 environment.



ISD will be executing the drill the week of November 4-8, 1996 from the hotsite facility in Federal Way. Agencies which have chosen to participate in the drill are responding to specific concerns uncovered in a review of their operations. In all cases, participating agencies have indicated an eagerness to take part and have shown a willingness to expand the necessary user and information processing staff resources to correct their audit deficiencies related to disaster recovery. The focus of the November drill will be on the following critical elements: (a) recovery of the Department of Correction's AS/400 platform and associated applications systems; and (b) the Department of Revenue's AS/400 platform and associated application systems for both of their AS/400 environments. All other major state agencies have been contacted and have indicated that they would prefer to participate in a drill scheduled early in 1997. ISD's Disaster Recovery Coordinator will be reporting drill results and future drill requirements following the November tests.

If you have questions or would like additional information on disaster recovery planning and drills, contact Leslie Cummings of Computer Policy and Development at 444-2469, ZIP! or E-Mail at lcummings@mt.gov.

IPX Addressing Changes for NetWare

ISD recently changed the addressing scheme for NetWare IPX addresses. There were several reasons for doing this. The old addressing scheme assigned numbers based on the agency the server belonged to for internal IPX numbers and the agency the wiring was associated with for the network wire address. As the enterprise grew this convention began to deteriorate due to multiple agencies being located on the same physical wire. Which agency should the address be associated with?

The executive reorganization that took place after the 1995 legislative session also caused issues with the IPX addressing. As servers that were previously owned by one agency became the property of another agency, the IPX addressing was incorrect based on the old addressing scheme.

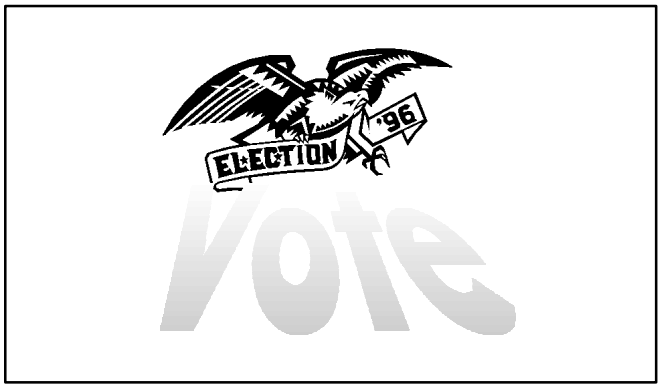
SummitNet deployment introduced another set of problems. As the routers were installed throughout the state, IPX addresses had to be assigned to the serial ports to allow IPX traffic to traverse the state's network from remote locations to Helena and back. Addresses were assigned to the serial ports based on what agency the port was associated with. This began to be a problem as multiple agencies were connected to a single serial line. Again, which agency should the address be associated with?

Another problem we encountered as Summitnet was deployed started several years ago as agencies started placing Novell NetWare servers in their remote offices. Agencies would setup their servers here in their Helena office using the addresses that were necessary in the Helena office environment. They

would then transport those servers to the appropriate locations throughout the state. Those locations were not connected to the network in Helena and thus changing the IPX address was not necessary. However, as the SummitNet router deployment took place, IPX addresses at remote locations that had not been visible in Helena were now visible on the network in Helena. IPX traffic does not function correctly when the same address appears in more than one location. It would be similar to having exactly the same mailing address in two parts of the state. If you sent mail to that address you would have a 50/50 chance of which location the mail would go to. With IPX traffic, when there is more than one location with the same address, where you are located in the network determines which server or network with the duplicate address you will be able to see. Unfortunately, NetWare is not always able to determine that there are duplicate addresses in a network the size of ours. When that happens, ISD staff spend several hours or days troubleshooting a variety of problems that will eventually be resolved when the duplicate addresses are discovered.

For these reasons, ISD has implemented an entirely new IPX addressing scheme. The current scheme is based upon physical location within the counties rather than agency ownership. This means that every NetWare server installation will require obtaining NetWare internal IPX addresses and network wire addresses from ISD. These numbers can be obtained from Network Operating End User Systems Support. Agency LAN administrators may call one of the staff of this group directly or place the call through the Customer Support Center at ext. 2000.

If you have any questions, please contact Dawn Sullivan of the Telecommunications Operations Bureau at 444-2974, ZIP! or E-Mail at dasullivan@mt.gov.



IP Address Changes

Private Internet Exchange (PIX)

Currently, there are only 254 subnets available in the 161.7.xxx.xxx Class B IP licenses assigned to the State. They are nearly all assigned, and the State cannot obtain any more Class B licenses. ISD is implementing a PIX device to make more IP addresses available to State government. The PIX device will allow ISD to create IP addresses *within* the State network. They will still appear to the outside as 161.7.xxx.xxx addresses.

ISD has chosen to use the 10.xxx.xxx.xxx series of IP addresses within the state network. All devices will be assigned a permanent 10.xxx.xxx.xxx address. As IP packets are sent outside of the State network, the address is dynamically translated into a 161.7.xxx.xxx address. That translation is maintained by the PIX. When IP packets are received from outside the state network, the address is converted back to the corresponding 10.xxx.xxx.xxx address.

The 10.xxx.xxx.xxx addresses have special status within the Internet and will not be assigned to any entity. Therefore, no one will be able to access the State network using 10.xxx.xxx.xxx addressed packets thus providing another measure of security for the State network.

A request has been sent to members of the Internet Service Providers Group (ISPG) asking for current 161.7.xxx.xxx addresses that should not be made available for assignment to outgoing 10.xxx.xxx.xxx packets. Typically these addresses are for existing servers such as Mail, DNS, and Web. These will be static addresses that do not change.

For most users there will be no impact other than having their IP address changed. For administrators the impact will vary depending on the amount of PCs, workstations, and servers in their configuration.

Devices that do not advertise their IP addresses (most PCs running LAN Workgroup or EP Client) need only to have their IP address changed. This can be spread out over a period of time. Devices that

advertise their addresses (Web, DNS and mail servers or UNIX workstations) will probably require significantly more work and will have to done in a coordinated manner.

The conversion to 10.xxx.xxx.xxx addresses will take a few months and ISD will be as accommodating as possible in making the conversion.

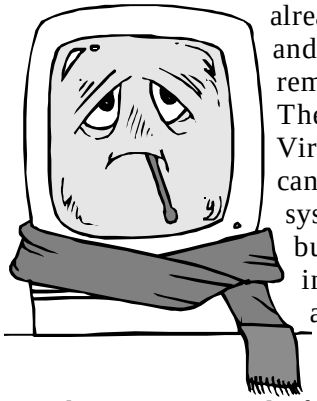
Before any changes are made, agencies will be contacted.

If you have any questions, please contact Charley Vander Voort of the Telecommunications Operations Bureau at 444-2863, ZIP! or E-Mail at cvandervoort@mt.gov.

How to Make a Clean Start-up Diskette

For DOS and Windows Virus Scanning

Most of us scan for computer viruses on a regular basis and that's great. Sometimes when we do find a virus we are able to clean it easily, but then there are those times when it just doesn't seem to work. Well, it could be because the virus is already active in the machine and it is resisting detection or removal through deception. These are called Stealth Viruses. Other times a virus can't be removed while the system is running because it builds a dependency on itself into the system and an attempt to remove it will render the system useless.



For these reasons, and a few more, it is important to know how to scan and/or clean viruses from a boot floppy. Remember that boot sector viruses (98% of our reported viruses) become active before any virus scan code can be run. When you suspect a problem with a virus because of odd behavior, unexplained increase in size of files, slowed operations or strange messages or sounds, it is best to do a virus scan after booting from a write protected diskette with current virus scan code and data files. This will keep hard disk boot sector viruses from starting so you can scan and clean more effectively.

As an analogy to biological viruses, it is important for DOS and Windows users to have this clean anti-viral, start-up (boot) diskette to regain a "sterile field" in case your system becomes virus infected.

IMPORTANT: Your system must be virus free to make a boot diskette. Any virus that is resident in your system could be transferred to your boot diskette and re-infect your system. If your computer is infected, go to another computer, scan it and if it is virus free proceed with the following steps. *THIS IS VERY IMPORTANT*. If you are unsure of the computers in your area, contact your network administrator to arrange for access to a known clean machine.

In DOS, start from the system prompt (**C:**). In Windows, you will need to open a DOS Window.

1. Insert a blank diskette in the **A:** drive. Caution: This procedure will overwrite any information the diskette contains.

2. Format the diskette by typing the following command at the **C:** prompt:

   format a: /s /u

NOTE: If you are using a DOS version before DOS 5.0, do not type the **/u**. If you are unsure of which version you are using, type **ver** at the **c:\ >** prompt, for verification.

When the system prompts you for a volume label, enter an appropriate name (such as Virusfree01) using no more than 11 characters.

3. Change to the directory where scan.exe file is kept. This could be on your server, on the doa_vas_001 server, or a local workstation. If you do not know where the scan.exe file is kept, ask your network administrator.

4. Once in the correct directory, copy the following files to your boot diskette. At the prompt type the following commands.

copy scan.exe a: *Enter*
copy scan.dat a: *Enter*
copy clean.dat a: *Enter*
copy names.dat a: *Enter*

5. **Optional:** For DOS and Windows 3.1 users, you can copy useful DOS programs to the diskette by typing the following command at the C: prompt: copy c:\dos\chkdsk.* a: *Enter*

Windows 95 users will have to copy from the *Command* subdirectory within their *Windows* directory. Note: this may be called *Windows, WIN95* or some other name as long as it is the directory that Windows 95 starts from. Example:

copy
c:\windows\command\scandisk.* a: *Enter*

Repeat this command as necessary for other useful programs. Replace the chkdsk.* or scandisk.* in the example above with these other useful program files.

mem.*
debug.*
diskcopy.*
fdisk.*
format.*
label.*
unerase.* (not available in WIN95)
sys.*
xcopy.*

Note: If you use a disk compression utility, be sure to copy the drivers required to access the compressed drive onto the clean boot diskette as well.

Important: Label and *write protect* this diskette. Store it in a secure place. To write protect a diskette, flip the little tab on the back of upper right side so that you can see through the little window. Most diskettes have two windows, you should be able to see through both. If you only have one window, you should be able to see through it.

Now test your new diskette by turning off your computer, inserting the diskette into the floppy drive and turn the computer back on. If you have disabled booting from a diskette in CMOS (a very recommended option), you will need to enable it for this test or whenever you need to clean a virus. During the startup of your computer, select System Setup according to how it works on your computer and enable the boot-from-floppy option. Power off / on your system and continue.

Your system should boot from the diskette and will probably ask you for the date and time. Just press *enter* for each prompt.

At the A: prompt type:

SCAN /ADL /CLEAN

This will start the scan of **A**ll **D**rives **L**ocal, which is all hard drives for those that have a C:, D: etc., with an option to clean any viruses it finds. SCAN will inform you of any viruses it finds and actions it takes.

Report all viruses to your security officer or network administrator. You can also report them to Ron Armstrong at 444-2905,ZIP! or E-Mail at rarmstrong@mt.gov. This is important because we need to know what viruses are active within the State and if the McAfee virus software is successful at cleaning them. It also helps us to spot trends and adjust policies and procedures to meet the ever changing challenge in our battle against computer viruses.

After scanning and any possible cleaning, be sure to disable the boot-from-floppy CMOS option if you turned it on.

One last note: McAfee updates their programs and the data files used to detect and clean viruses fairly often (more or less monthly). It is important to keep your boot diskette updated with the current release to insure the best possible protection.

If you have any questions about viruses please contact Ron Armstrong of the Telecommunications Operations Bureau at 444-2905, ZIP! or E-Mail at rarmstrong@mt.gov.

Reminder: Jobcard and User

By now you are probably sick of seeing this message in your MVS batch job's joblog:

XSMF104 - **WARNING**WARNING**
INVALID USER NUMBER FORMAT - CHANGE

TO 6 CHARACTER LOGONID *WARNING*
XSMF104

If you recall the September *News & Views* article on "ISD's New User Number And The Job Card", you already know that **every** batch job submitted to the MVS/ESA system has to have its job card modified

JOBCARD

by **December 8, 1996.** On that Sunday, jobs with 4 digit user numbers will fail with a JCL error and the message:

XSMF001 - JOB CANCELED; JOB CARD IS IN ERROR: USER NUMBER IS INVALID
XSMF001

Remember that the field on the job card where the user number is placed can be a **maximum** of 20 alphanumeric characters. This might mean elimination of some of the other information you have coded there. For instance, your old job card might look like this:

//CX1111AB JOB
(22222,PD),1111.36.YOUR.NAMEXX,CLASS=A,MSGCLASS=9

This job card would need to be modified to look like:

//CX1111AB JOB
(22222,PD),CX1111.36.YOUR.NAME,CLASS=A,MSGCLASS=9

Notice that the XX had to be deleted at the end of NAME.

The JCLFIXER procedure can be used to identify and change job cards. Documentation on how to use the procedure can be found as comments in the procedure.

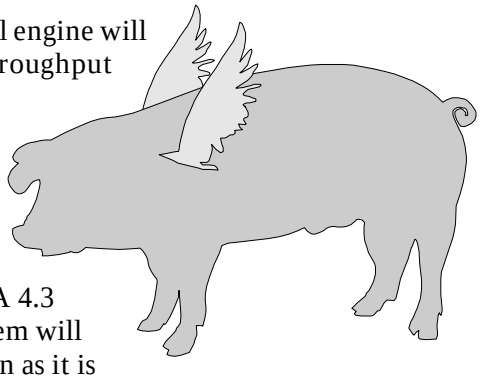
If you have any questions regarding this modification, please contact Glen Stroop of Systems Development Support at 444-2910, ZIP! or E-Mail at gstroop@mt.gov.

'And Pigs Can Fly'

More Computer; Lower Cost

Who would have thought that we could get an ES/9000 **832** cheaper than an ES/9000 **831**? Not *Computer Economic*, which predicted in July of 1996 that the 832 would cost $110,000 more than the 831. Well, that is exactly what happened when the bids were opened for the mainframe upgrade on October 1. So contrary to last month's article, ISD will be installing an ES/9000 832 in November.

The 832 is a ***two***-sided water-cooled 3-way processor. Two-sided models can be physically configured to operate as a single system or divided into two independent systems. ISD will configure the 832 as a single system. One side of the processor contains two Central Processing units (CPs) and the other has one. Basically, we will be adding a second side with one CP to our current 821. The 832 will still have 1024 MB of central storage and 2048 MB of expanded storage (double the current amount). The 832 comes in with additional parallel channels attached. After the install, the 832 will have 32 ESCON and 96 parallel channels. The MIP (millions of instructions per second) rating of the 832 is 172. The 831 is rated at 169 MIPs and the current 821 is rated at 117 MIPs.



This additional engine will increase the throughput of the system. Again, there will be no user changes required for this upgrade. The MVS/ESA 4.3 operating system will continue to run as it is currently. The installation date is still set for the weekend of November. 9 - 11. Look for further information on our new 832 processor in the December *News & Views.*

If you have any questions please contact Robin Anlian of Operating Systems Support at 444-2898, ZIP! or E-Mail at ranlian@mt.gov.

Meeting News

Mainframe Password Changes Are Coming

In compliance with the new password standards outlined in the Montana Operations Manual (MOM) section 1-0250.00, changes will be made affecting mainframe logons. The new password standards are very specific about length and makeup of passwords and cycles for changing them. These standards were reviewed and approved by the Information Technology Managers Group.

Subsection VIII State Standards for Information Technology Passwords

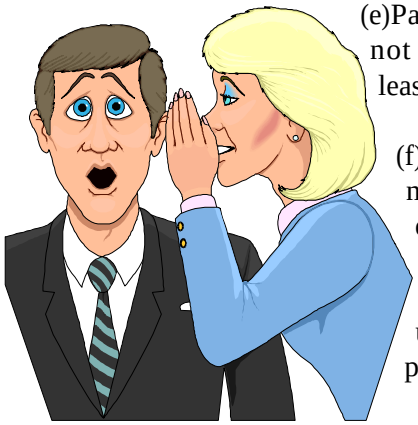
(1)State agencies and their employees shall follow these standards when establishing passwords for users, networks, computer systems or other information technology resources:

(a)Passwords must be at least 6 characters long;

(b)Passwords must contain at least one numeric and one alphabetic character;

(c)Passwords must not be obvious or easily guessed (userID, user's name, address, birth date, child's name, spouse's name, etc.)

(d)Passwords must be changed at least every 60 days;



(e)Passwords must not be reused for at least 4 cycles;

(f)Passwords must not be written down where they can be found by unauthorized personnel;

(g)Passwords must not be shared with other individuals.

I anticipate a December date for the implementation of the changes needed to enforce these standards. Another article will be in the December issue of *News & Views* stating the date that these changes will be made.

If you have questions about this or any other Mainframe/ACF2 security issue please contact Mick Plovanic of Security Methods & Media Management at 444-2571, ZIP!, or E-Mail at mplovanic@mt.gov.

ITMG Meeting

The Information Technology Managers Group met on October 2 and heard updates on a variety of enterprise-wide projects.

Operating Systems Subcommittee

The OS Subcommittee presented their ***draft*** report on enterprise E-Mail recommendations.

The following is a summary of the key recommendations and considerations:

- The scope must include state agencies, and it should allow other SummitNet users (local government, schools, libraries, etc) to participate if they elect to do so.

- Provide for central E-Mail architecture and directory administration while allowing for decentralized address administration.

- Must support Windows (3.x, 95 & NT) and Web browser clients, Unix client support is desired, but DOS and 3270 client support are not required.

- As a client/server application it should be targeted to the mid-tier server platform (Unix and NT), but it must also co-exist with our LAN and mainframe platforms.

- High value should be placed on open standards such as SMTP/MIME, LDAP and X.500 as well as on a vendor's commitment to open standards.

- Selection of an E-Mail/scheduling solution must include groupware.

- The vendor and product choice must be viewed as a strategic long term investment with more emphasis placed on corporate qualifications than on current features or cost.

- The state must select a single strategic solution that is uniformly deployed throughout state government agencies.

The subcommittee recommendations are intended to be the foundation of a subsequent Request for Proposal (RFP) to acquire a state standard E-Mail/ groupware solution. It is likely that additional recommendations dealing with security issues will be developed. The draft report is available on the Value Added Server (doa_vas_001\sys:guest\itmginfo\os\emailrp3).

Enterprise Software Subcommittee

This subcommittee is meeting to make recommendations regarding software distribution utilities. They will bring a charge statement and work plan to the November meeting.

Internet Standards Subcommittee

The Information Technology Advisory Council (ITAC) has asked ISD to identify Internet-related products it will support, rather than adopting a set of standards. In light of that decision, the ITMG Internet Standards Subcommittee has gone inactive, but will act as a sounding board for ISD as needed.

Network Policies

The group has been asked to provide input on a set of network policies distributed by ISD. The policies originated with the NetWare Managers Group and cover topics such as Access, Virus Detection and Prevention, Server Maintenance, User Responsibilities, Workstation Security and others.

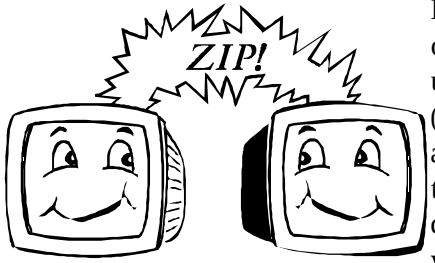
ITMG meetings are scheduled for the first Wednesday of the month at 8:30. Agendas and minutes are available on the state BBS and the Value Added Server or by contacting Amanda Christen of ISD at 444-2700, ZIP! or E-Mail at achristen@mt.gov.

ZIP!Tips

Internet Aliases

Since the implementation of Internet E-Mail Aliasing (for ZIP!Office and ZIP!Mail) last winter, there seems to be some confusion regarding users' Internet E-Mail Aliases. The convention used is: the first letter of your first name combined with your last name (up to 16 characters) followed by @mt.gov. If you have a common last name, you shouldn't assume your Internet E-Mail Alias is as such.

The E-Mail Tracking System attempts to automatically assign a unique Internet E-Mail Alias.



It proceeds in the order listed below until a unique (non-duplicate) alias is found. In the case where a duplicate alias would be formed then first letter/second letter of the first name followed by the last name is used.

1. First letter of the first name followed by the last name
2. First letter and second letter of the first name followed by the last name
3. First name followed by the first initial of the last name

NOTE: If all three attempts result in a duplicate alias, then a unique alias will be assigned manually.

Tech Talk

For example, if there are three (3) "B" Johnson's listed in the Address Book, the Internet E-Mail Aliasing would be as follows:

Bob Johnson (DOA)	Bjohnson@mt.gov
Bob Johnson (DOT)	Bojohnson@mt.gov
Betty Johnson	Bejohnson@mt.gov

E-Mail Administrators:

To obtain an updated "Internet E-Mail Alias" listing for your agency, send a request to the ZIP!Resource intray.

If there is a fourth name listed - Bertha Johnson, the Internet E-Mail Alias would be Berthaj. The reason is the E-Mail Tracking System tried to create Bjohnson and recognized the duplicate. It then tried to create Bejohnson but because it was also a duplicate, the first name/last initial alias was assigned.

To determine if there may be a duplicate listing of your last name, check in the ZIP! Address Book. If your alias is questionable, contact your agency's E-Mail administrator who has a listing of their users' Internet E-Mail Aliases.

Ideally, your currently assigned alias will stay with you regardless of where you work in State government. A problem exists whereas an employee may move from one department to another and not get deleted as an E-Mail user from the previous employer. Therefore, when we add the name to the E-Mail Tracking System, a message will say "Duplicate Alias Exists" and we manually assign another one. At that point, your Internet E-Mail Alias is now different than what you previously had. It is important that you contact your previous employer and have them remove your name from their agency. Also, send a message to "ZIP!Resources" (listed in the ZIP! Address Book) requesting your Internet E-Mail Alias remain the same.

If you have any questions regarding your Internet E-Mail Alias, contact Sue Skuletich of End User Systems Support at 444-6870, ZIP!, or E-Mail at sskuletich@mt.gov.

Skipping Spell-Check in WordPerfect

On occasion, you may have a document that contains portions that you don't want to send through Speller. It might be a list of names and other proper nouns or simply a section of foreign words that you know Speller won't recognize. It's time consuming to have to sit through these sections and choose *Skip* each time Speller stops at an unknown word.

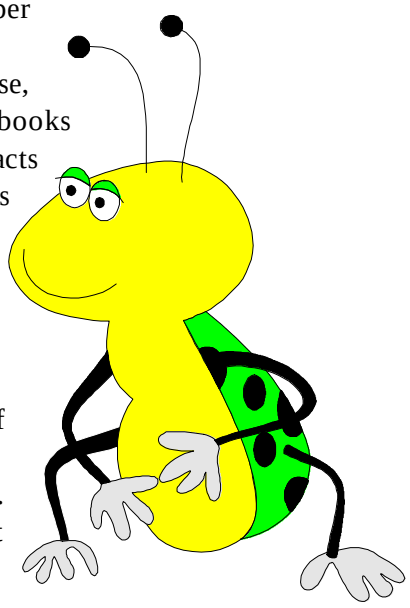
To avoid this, here is a way to tell the Speller to ignore certain sections of a document. When you're ready to spell-check, select the text that you don't want Speller to evaluate. Choose *Tools, Language* and select *Disable Writing Tools*. Choose *OK*. Now when you perform a spell-check, that part of the document is automatically skipped over.

Note: If you don't have text selected in your document when you turn this option on, Speller will ignore any text from that point forward. To turn the option back off so the remainder of the document is included in the spell-check, place the insertion point where you want the spell-check to begin again and choose *Tools, Language, Deselect Disable Writing Tools* and choose *OK*.

This tip was reprinted from the October 1996 issue of *WordPerfect for WINDOWS* magazine. If you have any questions about this feature or any other feature of WordPerfect, please call Irvin Vavruska of End User Systems Support at 444-6870, ZIP!, or E-Mail at ivavruska@mt.gov.

Debugging Your SAS Code Gets Easier.

Debugging is the process of removing logic errors from a program. Logic errors occur when the software does what you tell it to do rather than what you intended it to do. Unlike syntax errors, logic errors do not stop a program from running; instead, they cause it to produce results other than those intended. For example, you write a DATA step that starts with the number of books in your company's warehouse, adds the number of books delivered, and subtracts the number of books sold. The program shows that there are no books in the warehouse, but you look out your office door and see cases of books stacked high. Something is wrong. You may have input erroneous data, but is more likely that the logic of the calculation is wrong. You may have added where you should have subtracted or made a similar mistake. If the inventory program is large, you can spend a lot of time searching for the erroneous operation.



In previous releases of the SAS System, you could apply various debugging techniques to a DATA step:

a) Copy a few lines of the step into another DATA setup, execute it, and print the results of those statements.

b) Insert PUT statements at various points in the step, submit the step, and examine the values displayed at those points.

In release 6.11, the DATA step debugger offers you an easier, interactive way to find logic errors, and sometimes data errors, in DATA step.

The DATA step debugger is part of the base SAS software that consists of windows and a group of commands. By issuing commands, you can execute DATA step statements slowly and pause at any point to display the resulting variable values in a window. By observing the results displayed, you can determine where the logic error lies. Because the debugger is interactive, you can repeat the process of issuing commands and observing the results as many times as needed in a single debugging session. To invoke the debugger, add the DEBUG option to the DATA statement.

The DATA step debugger allows you to perform the following actions:

1. execute statements one by one or in groups
2. bypass execution of one or more statements
3. suspend execution at selected statements, either in each iteration of the DATA step or based on a condition, and resume execution on command
4. monitor the values of selected variables and suspend execution at the point a value changes
5. display the values of variables and assign new values to them
6. display the attributes of variables
7. receive help on individual debugger commands
8. assign debugger commands to function keys
9. use the macro facility to generate customized debugger commands.

Stay tuned next month... Same SAS Channel... Same SAS time... For more exciting SAS news.

For more information or questions, contact Jerry Kozak of End User Systems Support at 444-2907, ZIP! or E-Mail at jkozak@mt.gov.

Tech Talk

New Windows 95 Application Software

These new versions are currently being evaluated by ISD and are not supported as state standards. This article will give you a quick overview of what's on the horizon.

Corel has released WordPerfect 7.0, a Windows 95-only version of the venerable word processor. An NT version is currently in beta test and a non-32bit Windows 3.x version is NOT being considered. Many new Corel-like features have been added. Margins now appear as guide lines. Quickspots (little boxes which appear in the margins) have been added which allow you to apply quick formats and styles to paragraphs, lines or words. Misspelled words are automatically underlined as you type them (a highly popular feature of Microsoft® Word). You may correct your spelling as you go. If you right click on a misspelled word a list of suggested spellings pops up allowing you to replace the misspelled word. Also, WordPerfect has become Internet and Web aware, allowing HTML to be written from WordPerfect.

Lotus has released Approach 96 and Freelance Presentations 96. These are both 32-bit versions of the Approach 3.0. and Freelance Presentations 2.0. Users familiar with the previous versions of Approach and Freelance will feel comfortable with these new versions. The screens and menus are essentially unchanged. Lotus has added programmability to both with the addition of the Lotus Script. Lotus Script is a Visual Basic clone which adds object oriented programming capabilities. Additional formatting functions have also been added.

Approach 96 allows you to add pull-down select lists to Worksheets, change to a wider variety of formats, colors, fonts, and appearance on forms and reports. In addition, 'finds' and 'indexing' have also been improved. Freelance 96 comes with an expanded set of backgrounds. The drawing and text handling features have been greatly enhanced and overall usability has been greatly increased.

In the works is a new Windows 95 version of Lotus 1-2-3. It is slated for release sometime in November. This highly anticipated release will also contain the new programmable capability which Lotus Script provides.

If you have any questions regarding these new products please contact Brian Divine of End User Systems Support at 444-2791, ZIP! or E-Mail at bdivine@mt.gov.

MenuEdit - A Free WIN95 Utility

MenuEdit lets you easily edit the commands available on context menus and add new ones. You can make menu commands available to all files on the system, to all files of a specified type, or to all file types the system does not know about. You can also set the default command to be executed when an icon is double-clicked. Following are exerpts from the readme.txt file that comes with MenuEdit.

To install MenuEdit, copy the program file **menuedit.exe** to a directory on your hard disk and create a shortcut to it. When you launch MenuEdit, you'll see a set of three radio buttons on the left side of the window; these let you select file types. The first option, *Menu Items for All Files*, lets you edit the context menus for all file types on your system. The second option, *Menu Items for Unknown Files*, lets you edit the context menus for file types not registered on your system. If you select the last option, *Menu Items for Specific File Types*, the file-type list box below the radio buttons will become enabled, allowing you to select from all of the file types

registered on your system.

When you select a file type from the list, the commands associated with that file type appear in the list box on the right side of the window. You can add to this list by pressing the *New* button. If you select an item in the list and press the *Edit* button, the command associated with that menu item will be displayed for editing. If you press *Delete*, the item will be removed from the menu. If you select *Default*, the selected item will be the one chosen when you double-click on a file of that type.

MenuEdit (Version 1.00)
Copyright (c) 1996 Ziff Davis Publishing Company
by Douglas Boling
First Published October 22, 1996

If you would like a copy of MenuEdit, the files are available on the ISD Value Added Server at doa_vas_001\sys:guest\windows\winaddon\95addons\menuedit. If you don't have access to the VAS, or have questions about it, contact Denny Knapp of End User Systems Support at 444-2072, ZIP! or at dknapp@mt.gov.

Windows 95 Tip O'the Month

Hot Key Is Short for Shortcut

Is there a shortcut buried a few layers into your Start Menu that you use fairly frequently but not enough to add to your Desktop? Take all those System Tools, for instance; way too many clicks to get to them, if you ask us. For a much shorter route, set up a hot key to that Start Menu shortcut. From then on, you'll be able to access that program with the press of a keyboard combination.

Click the Start Menu with the right mouse button and choose Open to display its contents. Navigate your way to the program to which you'd like hot-key access, click its shortcut with the right mouse button (it has to be a shortcut, not a folder), and choose Properties. Select the Shortcut tab, click anywhere on the Shortcut key line to place your cursor after the word None, and finally, type a letter that you'd like to be used in combination with Ctrl+Alt to access that program (such as D for Disk Defragmenter). When you do, the entire hot-key combination will appear on that line. Click OK, and from now on, pressing that keyboard combo will open the program.

Many thanks to *TipWorld* at http://www.tipworld.com for this tip. Questions about Windows 95? Contact Denny Knapp of End User Systems Support at 444-2072, ZIP! or at dknapp@mt.gov.

New Product Announcement

ComputerLand of Helena:

IBM PC 365 Supports Dual Pentium Pro Processors and 200MHz Pentium Pro Processor Upgrades

The IBM PC 365 features the latest Intel Pentium Pro 180MHz and 200MHz processors with 256KB of internal cache. The PC 365 supports dual Pentium Pro Processors, providing significant performance improvement.

The 180MHz entry Model 10U has 16MB of EDO NP memory, 1.6GB hard drive, S3 Trio 64V+ video adapter, and dual processor support.

Model 12U has a 200MHz Pentium Pro Processor, 32MB of EDO NP memory, a 1.6GB hard drive, 8X CD-ROM, S3 Trio 64V+ video adapter, and dual processor support. Windows+ NT 3.51 Workstation is preinstalled on the system to provide a high-end, 32-bit operating system to complement the high-performance Pentium Pro technology.

The 200MHz, high-end Model 14U has a Matrox Millennium graphics accelerator with 4MB Windows RAM (WRAM), 32MB ECC memory, and an Ultra Wide SCSI controller with a very fast 2.1GB hard drive to give outstanding performance. The system is preinstalled with Windows NT 4.0 Workstation (when available), the latest 32-bit operating system. The Model 14U contains a 6X PD CD-ROM Drive (Read/Write CD-ROM).

The new PC 365 incorporates the latest innovative technologies such as Universal Serial Bus, high-speed infrared (4MB), 8X CD-ROM, PD CD-ROM, Wake on LAN, and support for Windows NT 4.0

Workstation.

The PC 365 Model 14U has not been approved by the Federal Communications Commission. This system is not, and may not be, offered for sale or lease, or sold or leased, until the approval of the FCC has been obtained.

Intended Customers

- Customers interested in 32-bit, high-performance platforms
- Customers who have or intend to acquire Windows NT
- Customers who need the highest performance PC products
- Customers who need SCSI and high-performance graphics

General Product Attributes:

- 180MHz Pentium Pro Processor (Model 10U).
- 200MHz Pentium Pro Processor (Model 12U and 14U).
- S3 Trio 64V+ graphics adapter with 2MB EDO Video memory (Models 10U and 12U)
- Matrox Millennium 64-bit Graphics Accelerator with 4MB of WRAM (Model 14U)
- PCI/ISA technology
- One infrared port capable of supporting an optional 4MB transceiver
- 256KB of L2 cache is integrated into the processo.
- 7200 rpm, 2.1GB fast and wide SCSI-2 hard drive
- 8X CD-ROM Model 12U or 6X PD CD-ROM (Read/Write CD-ROM) Model 14U
- 4MB infrared transfer capability.
- S.M.A.R.T EIDE drives.
- Five DASD bays with five slots
  - Model 10U, 12U - 3 PCI/ISA and 2 ISA slots and five bays
  - Model 14U -- 2 PCI and 3 PCI/ISA slots and five bays
- System software

All models support Microsoft Windows NT 4.0 Workstation. Model 12U is shipped with an IBM-installed Microsoft Windows NT 3.51 Workstation operating system. A coupon is shipped with this model that entitles the end user to receive an upgrade to Windows NT 4.0 Workstation (valid only for Model 12U, and must be redeemed by December 31, 1996).

For more information contact Mike Price of ComputerLand at 443-3200.

Term Contract News

Dell

Dell announced a new Latitude XPi on October 1st. This new product includes the new P150ST, Intel's fastest CPU designed for notebooks. It also includes the second generation 128-bit video chip set with 64K color. A 2.1GB hard drive is available as well as an 810MB and a 1.3GB. 16MB base RAM is standard with expandability to 48MB.

There is an integrated 6X CD- ROM drive and floppy, so there is no need to swap parts! Also included is an outstanding 4-speaker stereo system and a 12.1" TFT display.

Included with the system is a CardBus with 32-bit interface for improved performance. The Latitude XPi-CD is IrDA 1.1 compliant (4 MBps transfer rate!) and is fully compatible with current XPi peripherals.

Memory Base Increases

Dell now offers 16MB memory bases on all Latitude LM configurations. This memory upgrade was made available as a result of continued memory decreases seen throughout the industry.

Dell Announces the new Poweredge Pentium Pro 2100

The new Dell PowerEdge 2100 feature set is unmatched in its price range. A Pentium Pro processor with 256KB secondary cache, an integrated Ultra/Wide SCSI-3 controller, ECC memory utilizing DIMM technology, three PCI and three EISA expansion slots and industry-standard server management set the 2100 apart from the competition.

Available in both the 180 and 200 MHZ processors, the PowerEdge 2100 also offers great video performance with an integrated ATI video controller with 1MB of DRAM. It delivers resolutions as high as 1024 x 768 with up to 16.7 million colors.

EISA and PCI are vital to the PowerEdge 2100's performance. Data transfers of up to 133MB per second allow PCI to complement the performance of high-performance network cards or controllers.

The PowerEdge 2100 also comes standard with an 8X CD-ROM.

Exceptional promotions currently exist to introduce you to the new PowerEdge 2100. Call Scott Mangum of Dell at 800 274-7799 x66226 for promotion pricing.

Training Calendar

This schedule has been assembled by the Helena College of Technology of the University of Montana. If you have any questions about enrollment, please call 444-6821. All classes will be held at the Helena College of Technology at 1115 N. Roberts. Please note that these costs are subject to change each July 1st.

To enroll in a class, you must send or deadhead an enrollment application to the State Training Center, HCT, Helena, MT 59601. If you have questions about enrollment, please call 444-6821. *Once you enroll in a class, the full fee will be charged UNLESS you cancel at least three business days before the first day of class.* HCT is also willing to schedule specific classes by request from state agencies.

	DATES	COST	LENGTH
Client/Server Database Classes			
Intro. To Orarcle	November 6,7,8	255.00	3
Intro. To Oracle(New Version)	January 6,7	170.00	2
Oracle Forms	November 25,26,27	255.00	3
Prereq. Intro to Oracle			
Oracle End User Tools	December 16	85.00	1
Prereq. Intro. to Windows			
Oracle Reports	December 9,10	170.00	2
Prereq. Intro to Oracle			
Intro. To SQL(New Version)	January 13,14	170.00	2
Oracle Developer 2000, Part I(New Version)	January 20, 21, 22	255.00	3
PL/SQL Programming(New Version)	January 27, 28	170.00	2
Designer 2000	December 2-6	*850.00	5

Please Note the Changed Oracle Sequence Starting January 1997 - All classes are listed in order of the required prerequisites.

If you are missing a course(s) from the former sequence, we will make arrangements to fit you into the new sequence.

Introduction to Oracle 2 Days
- Relational Database Theory
- Modeling
- Client / Server
- The Oracle Architecture

Introduction to SQL 2 Days

Oracle Developer 2000, Part I 3 Days
- Forms
- Reports
- Graphics

PL/SQL Programming 2 Days
- SQL Programming
- Functions
- Procedures

Oracle Developer 2000, Part II 3 Days
- Advanced Forms
- Advanced Reports

Oracle Designer 2000 5 Days

Training News

	DATES	COST	LENGTH
Data Network/Mainframe Classes			
Novell Netware 4.1	December 16-20	*1000.00	5
JCL	November 12,13,14	255.00	3
Microcomputer Classes			
Introduction to Windows	November 1 December 2 January 8	85.00	1
Windows 95(2)	November 20am&pm December 9 am&pm January 8 am&pm	42.50	1/2
ZIP!Office	November 8 am	Free	1/3
Prereq. Intro to Windows	November 15 am December 4 am January 9 am		
Intro. to Internet	November 27 am&pm	42.50	1/2
Prereq. Intro to Windows	December 11am&pm January15 am&pm		
Internet	November 12,13	170.00	2
Prereq. Intro to Windows			
HTML	November 6,7	170.00	2
	January 9,10	170.00	2
Corel Draw	November 26	85.00	1
Lotus Freelance	November 14	85.00	1
WordPerfect 6.1 for Windows	November 18,19	170.00	2
Prereq. Intro to Windows	January 13,14		
WordPerfect 6.1 Conv.Windows	Novbember 25	85.00	1
Prereq. Intro to Windows	December 18		
WordPerfect 6.1 Tables & Merge	December 12 am	42.50	1/2
Prereq. WP 6.1 Conv. to Windows			
Desktop Publishing W/ WP 6.1	December 4,5	63.75	1 1/2
Prereq. WP 6.1 for Windows			
Lotus for Windows	November 18,19	170.00	2
Prereq. Intro to Windows	November 21,22 January 20,21		
Lotus Conv. for Windows	December 3	85.00	1
Prereq. Intro to Windows			
Lotus Approach	November 20	85.00	1
Prereq. Intro to Windows	December 13		

Prerequisites may be met with consent of Instructor.

*Price may vary depending on instructors expenses

ISD Class Enrollment Application

COMPLETE THIS APPLICATION IN FULL AND RETURN IT AT LEAST ONE WEEK PRIOR TO THE FIRST DAY OF CLASS

COURSE DATA

Course Request: _____

Date Offered: _____

STUDENT DATA

Name: _____

Soc. Sec. Number (for P/P/P): _____

Agency & Division: _____

Mailing Address: _____

_____

Phone: _____

How have you met the required prerequisites for this course? Explain, giving the class(s) taken, tutorial completed, and/or experience.

_____

_____

_____

BILLING INFORMATION/AUTHORIZATION MANDATORY

User ID: _ _ _ _ _ _ Agency#: _ _ _ _

Authorized Signature: _____

FULL CLASS FEE WILL BE BILLED TO THE REGISTRANT UNLESS CANCELLATION IS MADE THREE BUSINESS DAYS BEFORE THE START DATE OF THE CLASS.

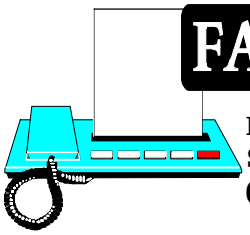
DEADHEAD COMPLETED FORM TO:
COMPUTER TRAINING CENTER
HELENA COLLEGE OF TECHNOLOGY
OF THE UNIVERSITY OF MONTANA
PHONE 444-6800 FAX 444-6892

CALL *BACK*

Information Services Division
(406) 444-2700

DeadHead *BACK*

Department of Admin
Information Services Division



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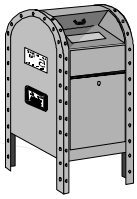
(406) 444-2701



MAIL *BACK*

Department of Admin
Information Services Division
PO Box 200113
Mitchell Building, Rm 229
Helena, MT 59620-0113

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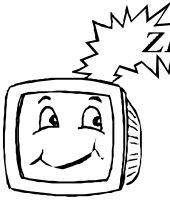
via Internet



ZIP! *BACK*

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Editor's Notes

Published By...
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If you would like to submit an article to ISD News & Views for publication, please send it to Trapper Badovinac, preferably via ZIP!. Please have your article in by the 15th of the month for inclusion in the following month's newsletter.

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Editor
Trapper Badovinac (444-4917), ZIP! or E-Mail at tbadovinac@mt.gov.

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